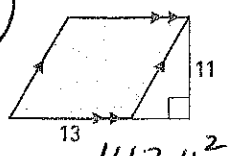
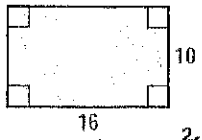
Chapter 11

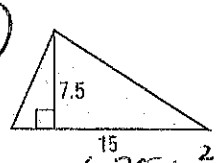
11.1 Find the area of the polygon.

1. 

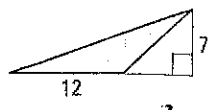
143 u²

2. 

160 u²

3. 

56.25 u²

4. 

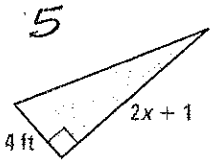
42 u²

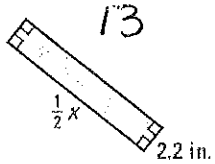
11.1 The lengths of the hypotenuse and one leg of a right triangle are given. Find the perimeter and area of the triangle.

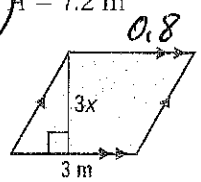
5. Hypotenuse: 25 cm; leg: 20 cm
60cm, 150cm²

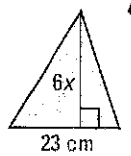
6. Hypotenuse: 51 ft; leg: 24 ft
120ft, 540ft²

11.1 Find the value of x.

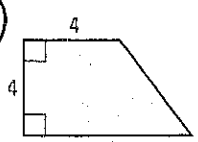
7. $A = 22$ ft²
5


8. $A = 14.3$ in.²
13


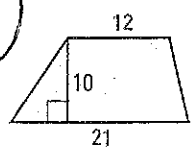
9. $A = 7.2$ m²
0.8


10. $A = 276$ cm²
4


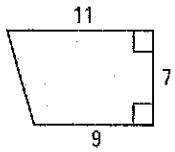
11.2 Find the area of the trapezoid.

11. 

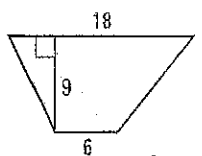
22 u²

12. 

165 u²

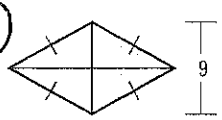
13. 

70 u²

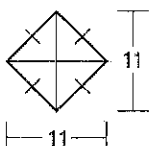
14. 

108 u²

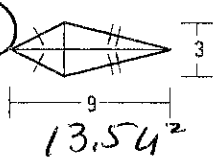
11.2 Find the area of the rhombus or kite.

15. 

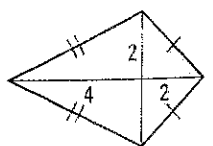
72 u²

16. 

60.5 u²

17. 

13.5 u²

18. 

12 u²

11.3 The ratio of the areas of two similar figures is given. Write the ratio of the lengths of the corresponding sides.

19. Ratio of areas = 100 : 81
10 : 9

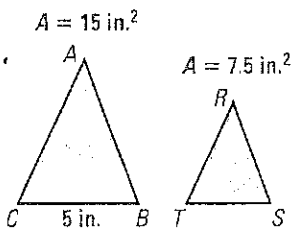
20. Ratio of areas = 25 : 100
5 : 10

21. Ratio of areas = 8 : 1
$2\sqrt{2} : 1$

11.3 Use the given area to find ST.

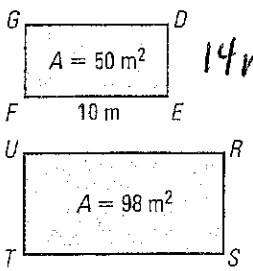
22. $\triangle ABC \sim \triangle RST$

$\frac{5\sqrt{2}}{2}$ in.



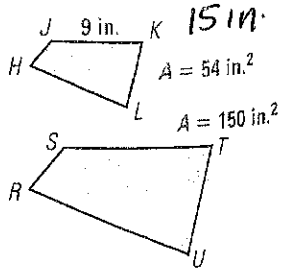
23. $DEFG \sim RSTU$

14 m



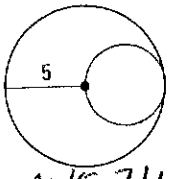
24. $HJKL \sim RSTU$

15 in.

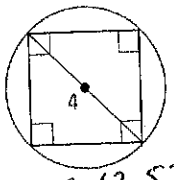


EXTRA PRACTICE

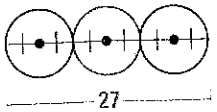
11.4 Find the circumference of the red circle.

25. 

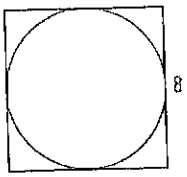
≈ 15.71u

26. 

≈ 12.57u

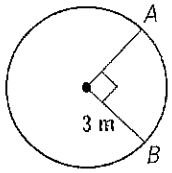
27. 

≈ 28.27u

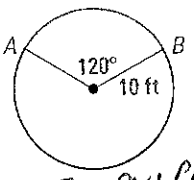
28. 

25.13u

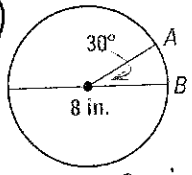
11.4 Find the length of $\overset{\frown}{AB}$.

29. 

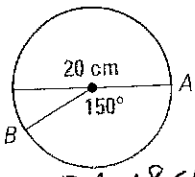
4.71m

30. 

20.94ft

31. 

2.09 in

32. 

26.18cm

11.5 Find the exact area of a circle with the given radius r or diameter d. Then find the area to the nearest hundredth. 100π ft², 314.16ft²

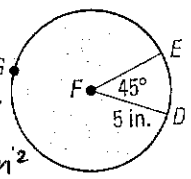
33. $r = 3$ in. 9π in² 28.27in²

34. $r = 2.5$ cm 6.25π cm², 19.63cm²

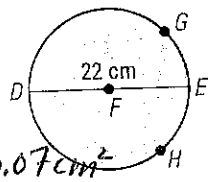
35. $d = 20$ ft

36. $d = 13$ m 42.25π m², 132.73m²

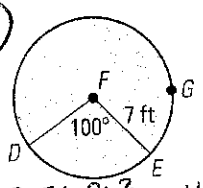
11.5 Find the areas of the sectors formed by $\angle DFE$.

37. 

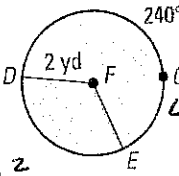
9.82in²
68.72in²

38. 

190.07cm²
190.07 cm²

39. 

42.76ft²

40. 

4.19yd²
8.38yd²
111.18ft²

11.6 Find the measure of a central angle of a regular polygon with the given number of sides.

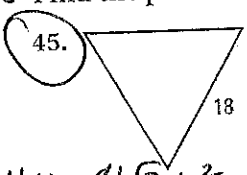
41. 8 sides 45°

42. 12 sides 30°

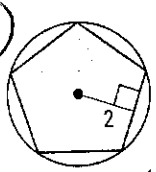
43. 20 sides 18°

44. 25 sides 14.4°

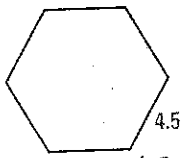
11.6 Find the perimeter and area of the regular polygon.

45. 

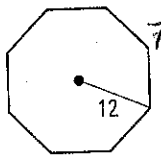
54u, 81√3 u²

46. 

14.53u, 14.53u²

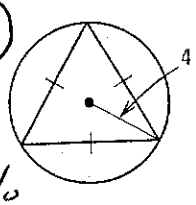
47. 

27u, 52.61u²

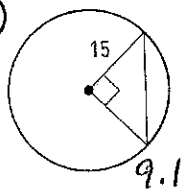
48. 

73.48u
407.29u²

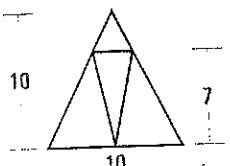
11.7 Find the probability that a randomly chosen point in the figure lies in the shaded region.

49. 

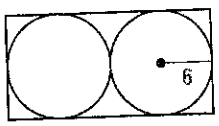
58.7%

50. 

9.1%

51. 

30%

52. 

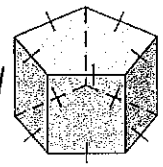
21.5%

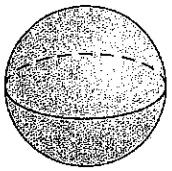
11.7 53. A local radio station plays your favorite song once every two hours. Your favorite song is 4.5 minutes long. If you randomly turn on the radio, what is the probability that your favorite song will be playing? 3.75%

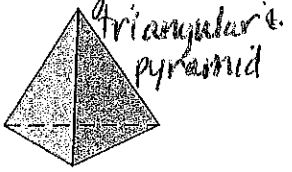
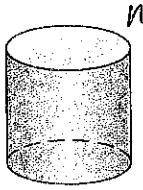
EXTRA PRACTICE

Chapter 12

12.1 Determine whether the solid is a polyhedron. If it is, name the polyhedron. *Explain* your reasoning.

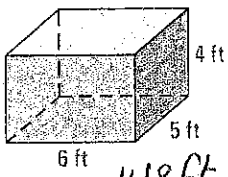
1.  yes pentagonal prism

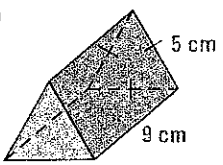
2.  no

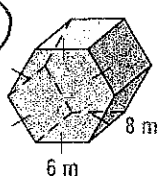
3.  yes triangular pyramid  no

12.1 5. Determine the number of faces on a solid with six vertices and ten edges. 6 faces

12.2 Find the surface area of the right prism. Round to two decimal places.

6.  148 ft²

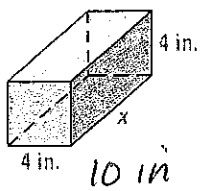
7.  156.65 cm²

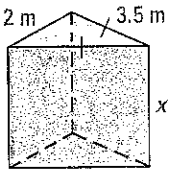
8.  475.06 m²

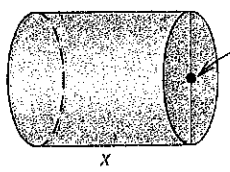
12.2 Find the surface area of the right cylinder with the given radius r and height h. Round to two decimal places.

9. $r = 2$ cm, $h = 11$ cm — 163.36 cm²
10. $r = 1$ m, $h = 1$ m — 12.57 m²
11. $r = 22$ in., $h = 9$ in. — 4285.13 in²
12. $r = 17$ mm, $h = 5$ mm — 2349.91 mm²

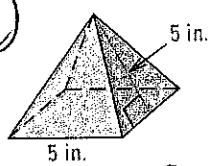
12.2 Solve for x given the surface area S of the right prism or right cylinder. Round to two decimal places.

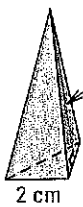
13. $S = 192$ in.²  10 in

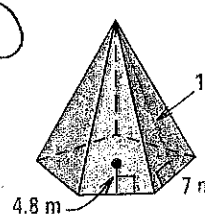
14. $S = 33.7$ m²  3.00 m

15. $S = 754$ ft²  14.00 ft

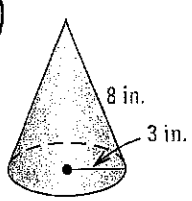
12.3 Find the surface area of the regular pyramid. Round to two decimal places.

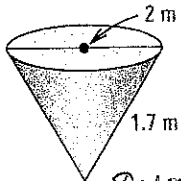
16.  75 in²

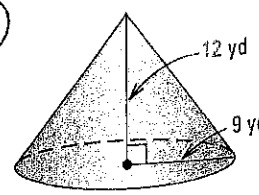
17.  16.73 cm²

18.  346.5 m²

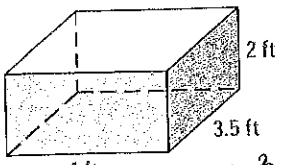
12.3 Find the surface area of the right cone. Round to two decimal places.

19.  103.67 in²

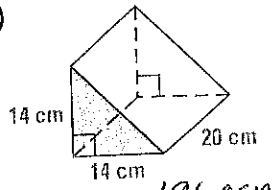
20.  8.48 m²

21.  678.58 yd²

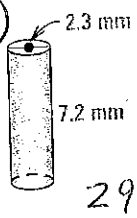
12.4 Find the volume of the right prism or right cylinder. Round to two decimal places.

22. 

28 ft³

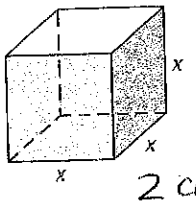
23. 

1960 cm³

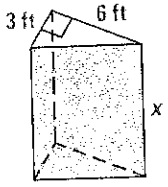
24. 

29.91 mm³

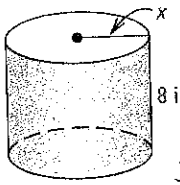
12.4 Find the value of x. Round to two decimal places, if necessary.

25. $V = 8$ cm³ 

2 cm

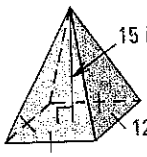
26. $V = 72$ ft³ 

8 ft

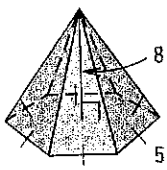
27. $V = 628$ in.³ 

5.00 in

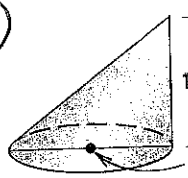
12.5 Find the volume of the solid. Round to two decimal places.

28. 

720 in³

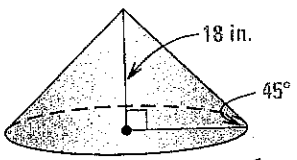
29. 

173.21 ft³

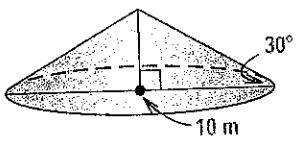
30. 

636.18 m³

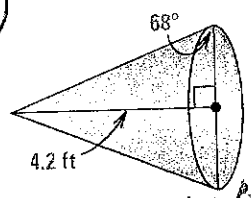
12.5 Find the volume of the right cone. Round to two decimal places.

31. 

6107.26 in³

32. 

75.57 m³

33. 

12.66 ft³

12.6 Find the surface area and volume of a sphere with the given radius r or diameter d. Round to two decimal places.

34. $r = 13$ m — 9202.77 m³, 2123.72 m²

35. $r = 1.8$ in.

36. $d = 28$ yd — 11494.04 yd³, 2463.01 yd²

37. $d = 13.7$ cm

38. $r = 20$ in.

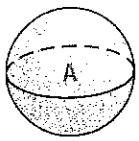
39. $r = 17.5$ mm

40. $d = 15.2$ m

41. $d = 23$ ft

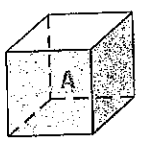
12.7 Solid A (shown) is similar to Solid B (not shown) with the given scale factor of A to B. Find the surface area and volume of Solid B.

42. Scale factor of 3 : 2



$S = 324\pi$ in.²
$V = 972\pi$ in.³

43. Scale factor of 2 : 1



$S = 864$ ft²
$V = 1728$ ft³

44. Scale factor of 4 : 7

$S = 64\pi$ cm²
$V = 64\pi$ cm³

12.7 45. Two similar cylinders have volumes 12π cubic units and 324π cubic units. Find the scale factor of the smaller cylinder to the larger cylinder.